



**RHODE ISLAND**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**OFFICE / DIVISION OF WASTE MANAGEMENT**

235 Promenade Street, Room 380  
Providence, Rhode Island 02908

**PILOT STUDY APPROVAL LETTER**

October 25, 2017

**File No. SR-07-0255**

Formerly Case No. 2000-044

Joseph Guarnaccia, EHS Remediation Specialist  
BASF Corporation  
100 Park Avenue  
Florham Park, New Jersey 07932

RE: Supplemental Insitu-Ozone Injection Pilot Test Work Plan  
Ciba –Geigy facility  
180 Mill Street  
Cranston, Rhode Island  
Plat Map 4 / Lot 1102

Dear Mr. Guarnaccia:

On November 9, 2011 the Rhode Island Department of Environmental Management (the Department) amended the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations). The purpose of these Regulations is to create an integrated program requiring reporting, investigation, and remediation of contaminated sites in order to eliminate and/or control threats to human health and the environment in a timely and cost-effective manner. A Pilot Study Approval Letter is a document used by the Department to approve small scale pilot studies at contaminated sites in order to evaluate feasibility, cost, time, and scope to predict the necessary parameters for design prior to implementation of a full-scale remediation.

This Pilot Study Approval Letter is not intended to evaluate, nor does it authorize, full scale remediation of an entire site (which will require an Order of Approval), arguments on cost ineffectiveness of a full scale remedy, or technology impracticability. Also, the Department reserves the right to require additional investigatory or remedial actions if the pilot study fails to achieve the goals outlined in the Supplemental Pilot Study Work Plan for Ciba Geigy RCRA Closure Project-Insitu Subsurface Ozone Injections within a period of time that the Department considers reasonable.

The Department has received and reviewed the following documents prepared by Advanced GeoServices, which together describe a pilot study meant to evaluate a possible remedial technology for existing contamination at the Site:

1. Response to RIDEM Comments dated October 12, 2017;
2. Supplemental Pilot Study Work Plan for Ciba Geigy RCRA Closure Project -Insitu Subsurface



**Ozone Injections (Supplemental Pilot Study Work Plan)** dated August 28, 2017, received August 31, 2017 and prepared by Civil & Environmental Consultants (CEC);

3. **In-situ Ozone Injection Pilot Test Work Plan**, received by the Department on November 21, 2016, and prepared by Advanced GeoServices (AGS); and
4. **Response to DEM Comments-** dated December 6, 2016 prepared by Advanced GeoServices.

The proposed pilot study involved conversion of the Air Sparging Wells, AS-1(screened 38-40 feet bgs) and AS-2(screened 19-21 bgs) into Ozone Injection Wells as part of a 5-day pilot test to determine if an in-situ reactive barrier can be installed parallel to the river bulkhead which will use Ozone (an oxidant) being regularly applied to destroy the VOC contamination at depth in-situ before it migrates into the Pawtuxet River. The Supplemental Pilot Study Work Plan involves filling data gaps observed from the results of the original Pilot Test and installation of an additional pair of nested monitoring wells (PZ-7S and PZ-7D) at the request of RIDEM. CEC also confirmed that there two rounds of groundwater sampling scheduled at 4 weeks after the injections and at 8 weeks after the injections in addition to the regularly weekly monitoring.

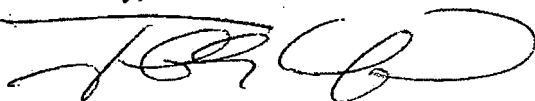
Based upon our review, the Department approves the supplemental work pilot study outlined in the Supplemental Pilot Study Work Plan. Any proposed changes to the Department approved supplemental pilot study shall be pre-approved by the Department and reported to the Department by telephone within one (1) working day and in writing within five (5) business days.

It is the Department's intent that all conditions set forth in this Pilot Study Approval Letter shall remain in full force and effect unless specifically altered by the Department in writing. Further, this letter continues to place primary responsibility for the construction, operation, and maintenance and monitoring of the approved Supplemental Pilot Study Work Plan and its associated implementation on the **BASF Corporation**. As the Responsible Party and Performing Party, **BASF Corporation** is expected to implement the Supplemental Pilot Study Work Plan in an expeditious and professional manner that prevents non-compliance with this letter and said Work Plan, and protects human health and the environment.

**This Pilot Study Approval Letter does not remove your obligation to obtain any necessary permits from other local, State, and/or Federal agencies.**

If you have any questions regarding this letter or would like the opportunity to meet with Department personnel, please contact me by telephone at (401) 222-2797, ext. 7102, or by E-mail at [jeff.crawford@dem.ri.gov](mailto:jeff.crawford@dem.ri.gov).

Sincerely,



Jeffrey Crawford, Project Manager  
Principal Environmental Scientist  
Office of Waste Management

Authorized by,



Kelly Owens  
Supervising Engineer  
Office of Waste Management

Cc: Craig Roy DEM OWR